

## NPN SILICON TRANSISTOR

### 主要用途

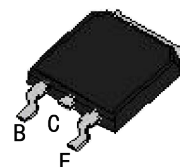
音频放大、开关功率放大

### 极限值 ( $T_a=25^{\circ}\text{C}$ )

|                                              |                               |
|----------------------------------------------|-------------------------------|
| $T_{stg}$ ——贮存温度                             | $-55\sim 150^{\circ}\text{C}$ |
| $T_j$ ——结温                                   | $150^{\circ}\text{C}$         |
| $P_C$ ——集电极功率耗散 ( $T_c=25^{\circ}\text{C}$ ) | 10W                           |
| $P_C$ ——集电极功率耗散 ( $T_A=25^{\circ}\text{C}$ ) | 1W                            |
| $V_{CBO}$ ——集电极—基极电压                         | 40V                           |
| $V_{CEO}$ ——集电极—发射极电压                        | 30V                           |
| $V_{EBO}$ ——发射极—基极电压                         | 5V                            |
| $I_C$ ——集电极电流                                | 3A                            |
| $I_B$ ——基极电流                                 | 0.6A                          |

### 外形图及引脚排列

TO-252



- 1—基极, B  
2—集电极, C  
3—发射极, E

### 电参数 ( $T_a=25^{\circ}\text{C}$ )

| 参数符号          | 符 号 说 明     | 最小值 | 典型值 | 最大值 | 单 位           | 测 试 条 件                                   |
|---------------|-------------|-----|-----|-----|---------------|-------------------------------------------|
| $I_{CBO}$     | 集电极—基极截止电流  |     |     | 1   | $\mu\text{A}$ | $V_{CB}=30\text{V}, I_E=0$                |
| $I_{EBO}$     | 发射极—基极截止电流  |     |     | 1   | $\mu\text{A}$ | $V_{EB}=5\text{V}, I_C=0$                 |
| $h_{FE}$      | 直流电流增益      | 60  |     | 400 |               | $V_{CE}=2\text{V}, I_C=1\text{A}$         |
| $V_{CE(sat)}$ | 集电极—发射极饱和压降 |     | 0.3 | 0.5 | V             | $I_C=2\text{A}, I_B=0.2\text{A}$          |
| $V_{BE(sat)}$ | 基极—发射极饱和压降  |     | 1.0 | 2   | V             | $I_C=2\text{A}, I_B=0.2\text{A}$          |
| $C_{ob}$      | 输出电容        |     | 45  |     | pF            | $V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$ |
| $f_T$         | 特征频率        |     | 90  |     | MHz           | $V_{CE}=5\text{V}, I_E=0.1\text{A}$       |

### 分档及其标志

| R      | Q       | P       | E       |
|--------|---------|---------|---------|
| 60—120 | 100—200 | 160—320 | 200—400 |

■ 典型特性曲线

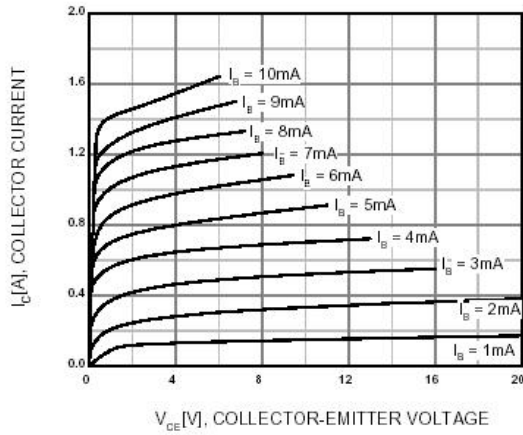


Figure 1. Static Characteristic

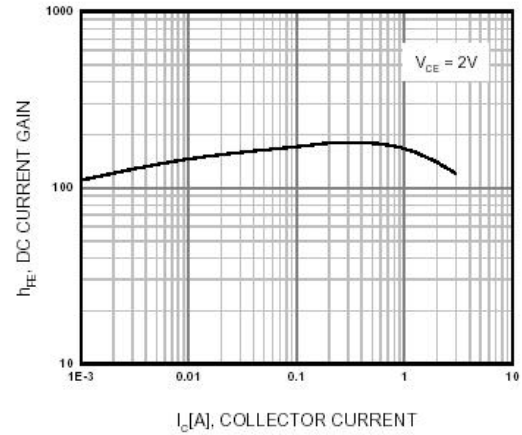


Figure 2. DC current Gain

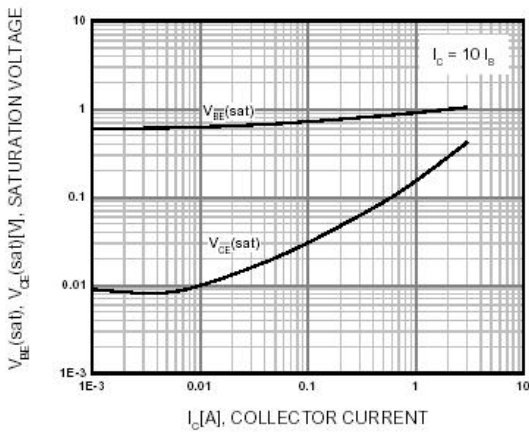


Figure 3. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage

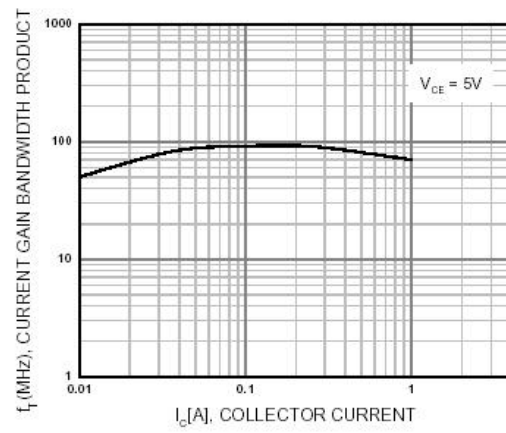


Figure 4. Current Gain Bandwidth Product

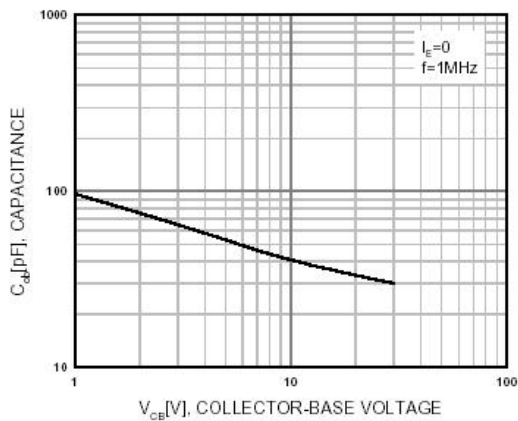


Figure 5. Collector Output Capacitance

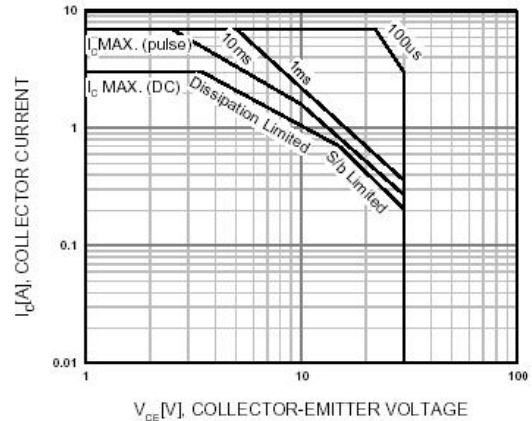


Figure 6. Safe Operating Area

■ 典型特性曲线

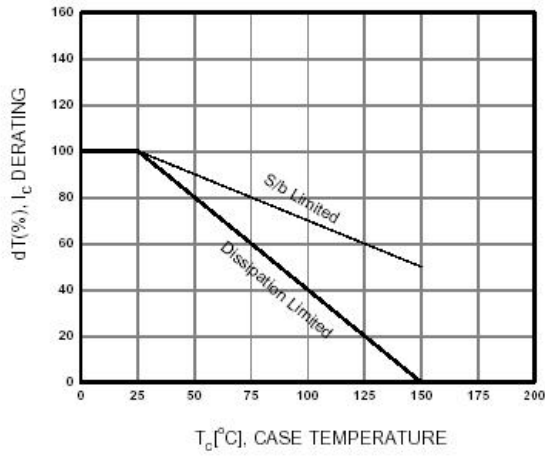


Figure 7. Derating Curve Of Safe Operating Areas

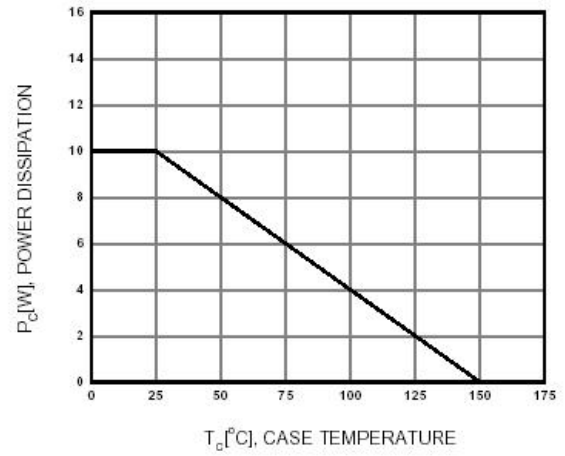


Figure 8. Power Derating

**NOTE:**

1. Exceeding the maximum ratings of the device in performance may cause damage to the device, even the permanent failure, which may affect the dependability of the machine. Please do not exceed the absolute maximum ratings of the device when circuit designing.
2. When installing the heat sink, please pay attention to the torsional moment and the smoothness of the heat sink.
3. MOSFETs is the device which is sensitive to the static electricity, it is necessary to protect the device from being damaged by the static electricity when using it.
4. Shenzhen Minos reserves the right to make changes in this specification sheet and is subject to change without prior notice.

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